



NX2/NX4

Replace CMOS battery

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1 Introduction

CMOS batteries do not last forever. Typically they have a lifetime of 4 to 5 years (when installed in a controller). If controllers are not used regularly, the CMOS battery will eventually become discharged.

The CMOS battery stores the date, time and many other settings that the controller needs to start up without problems.

A discharged CMOS battery will give the following symptoms:

- *Date and time will be wrong.*
 - o *If the date and time are wrong, the OS (operating system) will not install or will install poorly. The operating system will sometimes be replaced when installing new software.*
- *A very slow startup of the controller.*
- *Internal screen not working*
- *Blue screen of death suddenly appears when operating the controller.*

Note that the above mentioned problems are not always caused by a dead CMOS battery. Other things can also be responsible for the above problems.

A new CMOS battery has a voltage between 3.2 and 3.3V

If the CMOS battery in the controller reads a voltage:

- *Below 3.1V on new controllers: replace the battery*
- *Below 2.9V on controllers that come in for service: replace the battery*

2 Anti-static discharge precautions

WARNING: ANTI-STATIC PRECAUTIONS

ESD or Electrostatic Discharge is one of the main causes of electronic defects, such that the defect may not be immediately noticeable, but can pop up later, even months afterwards. ESD can ruin electronic components and can cause significant additional costs. Therefore it is very important to follow the instructions below.

Be sure to be properly grounded before opening the controller:

- *If possible: Carry out the service at an anti-static workstation.*
- *Wear a grounded anti-static wristband.*
- *Touch a grounded conductor every few minutes to discharge any static buildup.*
- *Hold components by their edges only. Do never touch the surfaces or any of the contacts of the PCBs.*



4 Tools needed

Following tools are needed:

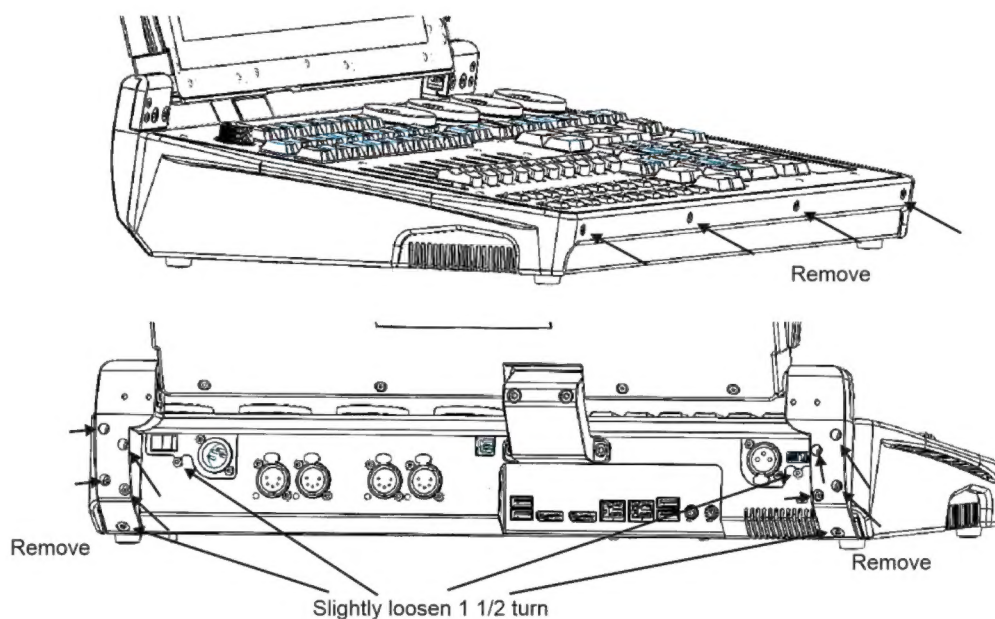
- Torx T10 screw driver (NX2 & NX4)
- Torx T15 screw driver (NX2 & NX4)
- Socket bit 5.5mm (NX4)

5 Procedure to change and test the CMOS battery

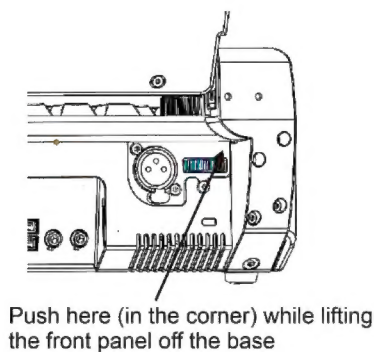
5.1 NX2

1. Remove screws:

- Remove 4 screws on the front (Torx T10)
- Remove 8 screws on the back hinges (Torx T10)
- Slightly loosen 2 screws on the back (Torx T10)
- Slightly loosen 2 screws on the bottom of the hinges (Torx T15)



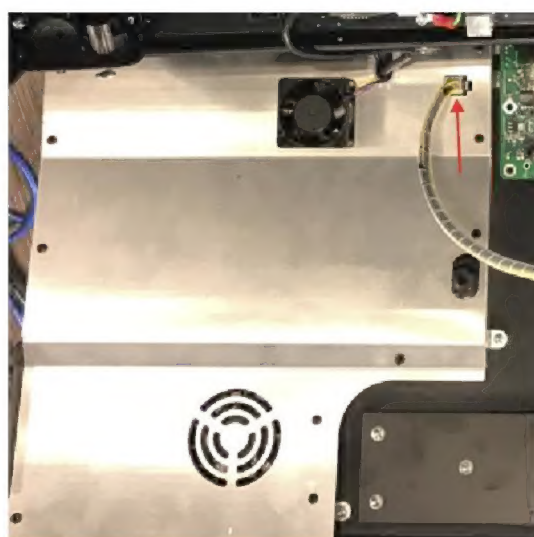
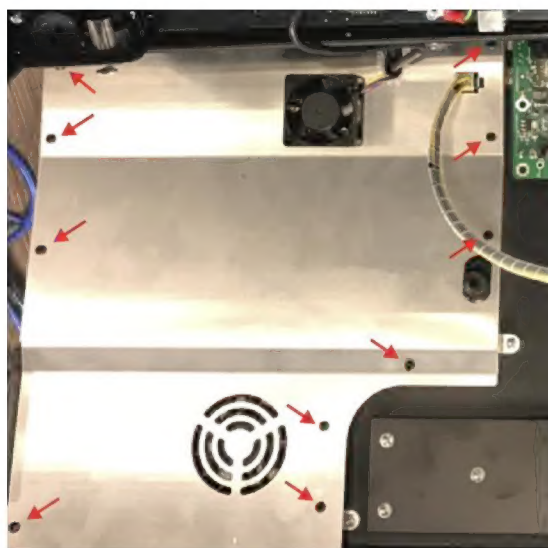
2. Lift the front panel off the base. Push the top corner of the lamp dimmer plate in slightly, while lifting the front panel off the base.



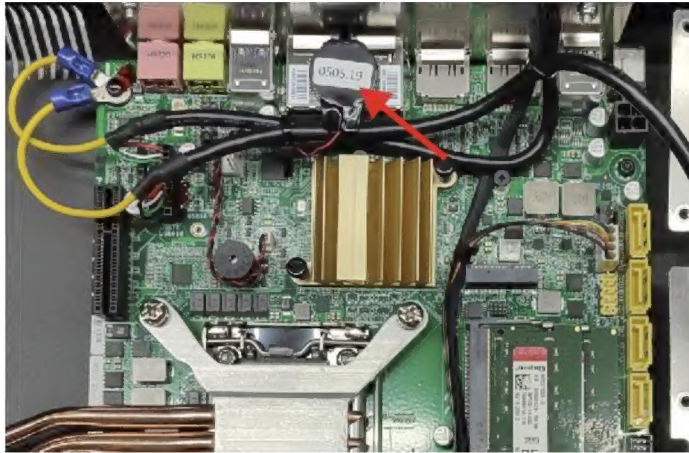
3. Place the front panel on the screen (put a piece of cardboard between them to prevent damage), as shown in the photo. **Make sure that the cabling is not damaged.**



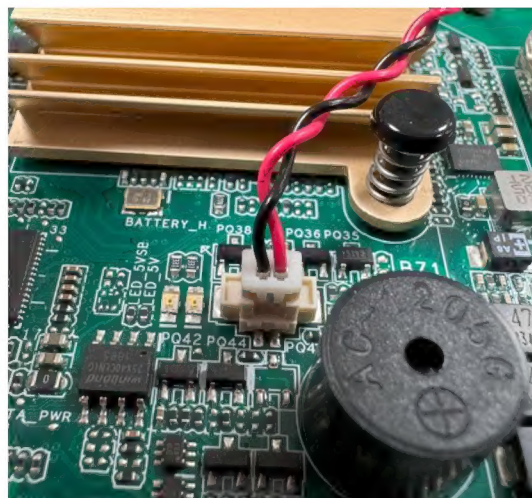
4. Remove the 10 screws from the mainboard cover (Use Torx T10) and unplug the mainboard power cable



5. Lift the mainboard cover and unplug the cover fan from the mainboard.
6. Locate the CMOS battery on the motherboard



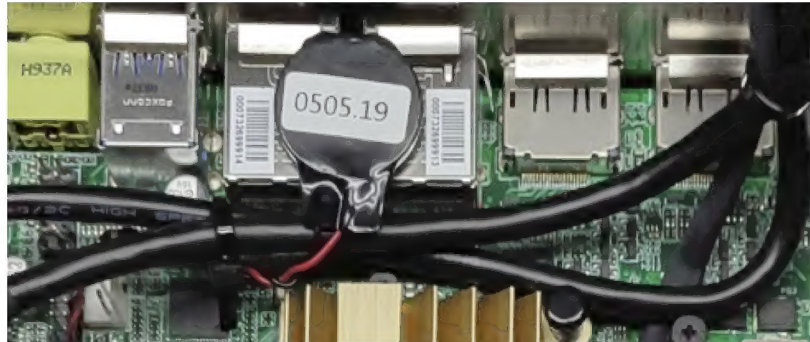
7. Measure the voltage between the black and red cable on the connector:
 - It should be bigger than 3.0V for new systems
 - It should be bigger than 2.8V for older systems



8. If the battery must be replaced, it is a wired CR2032 battery.
 - **Watch the polarity on the connector: the polarity (the red and black wire on the connector) must be the same as the original battery. On some new batteries the polarity is reversed.**



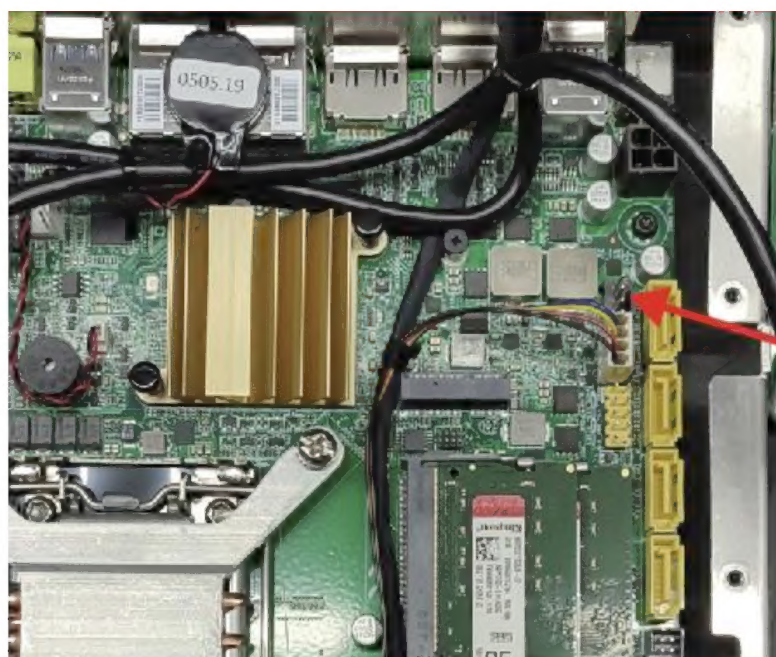
9. Glue the new battery with double sided tape on one of the output connectors



10. Close the controller in reverse order of opening. **Read first the following remarks.**
 - **Be careful when placing the motherboard cover. The wiring must not be pinched.**

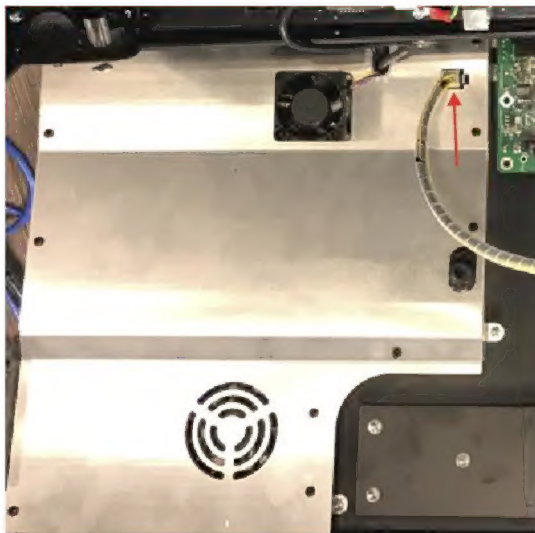


- **Do not forget to connect the cover fan when placing the motherboard cover.**



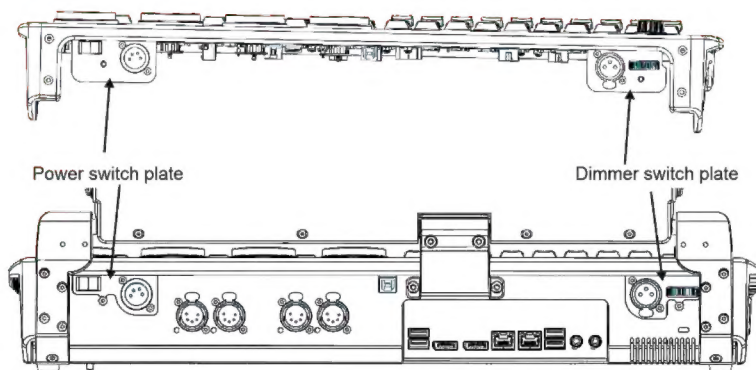
Connector for cover fan

- **Do not forget to reconnect the motherboard power cable**



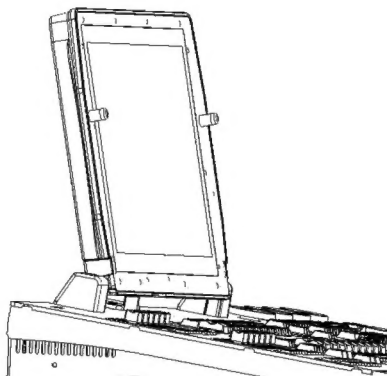
- **Before the controller is fully screwed in, it is best to test it first. The CMOS will automatically restore the default settings. It may take longer to boot the first time.**

PLEASE NOTE that the dimmer plate and power switch plate are on the inside of the controller when you place the front panel on the base. Forced closing when the 2 plates are not in the correct position can damage the dimmer wheel of the desk lamp and/or the power switch!!!

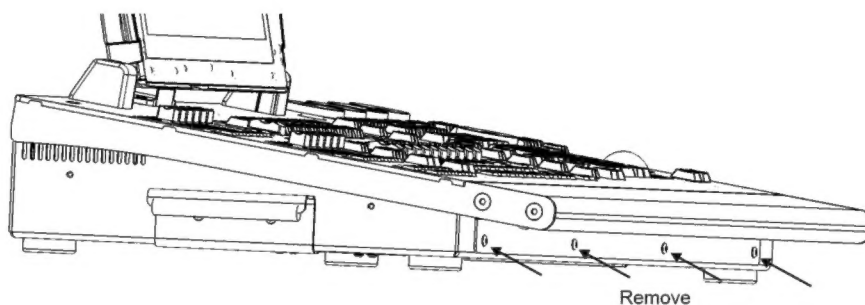


5.2 NX4

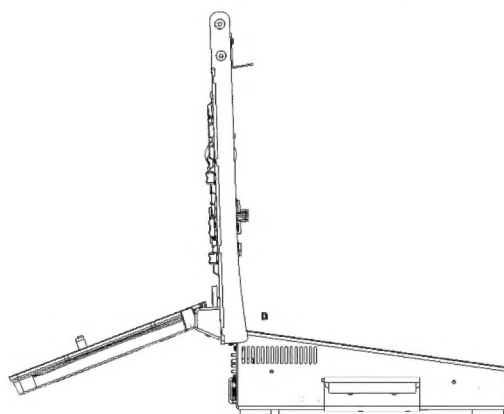
1. Place the desk lights in horizontal position behind the screen
2. Place the screen in open position



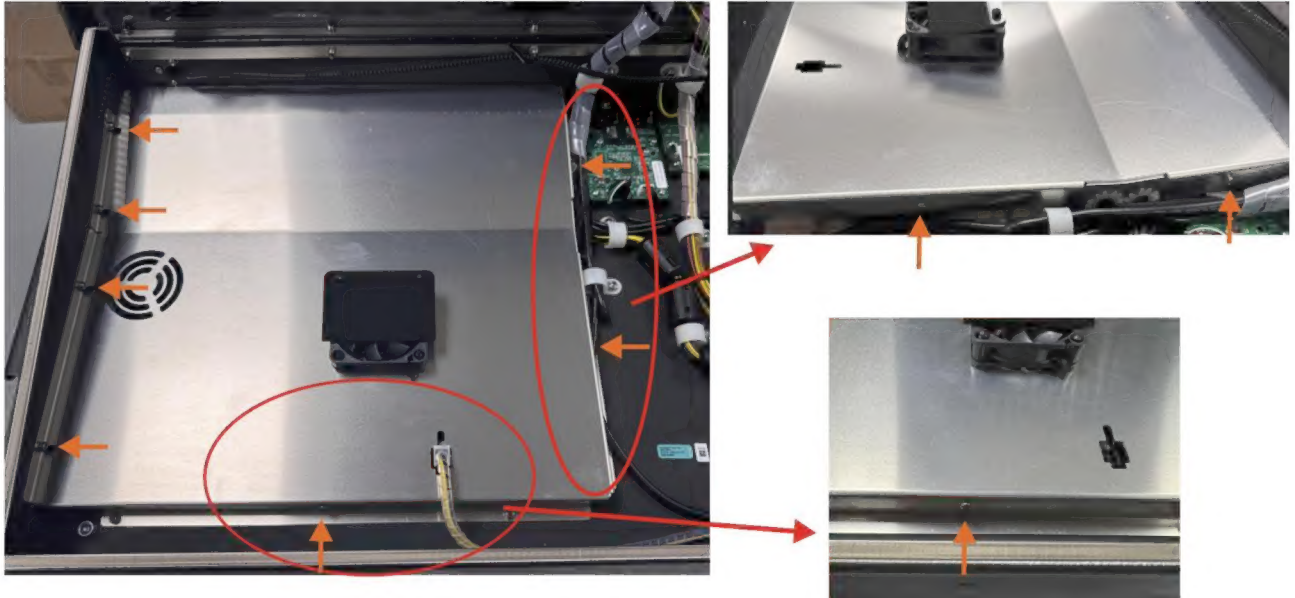
3. Remove screws:
 - Remove 4 screws on the front (Torx T15)



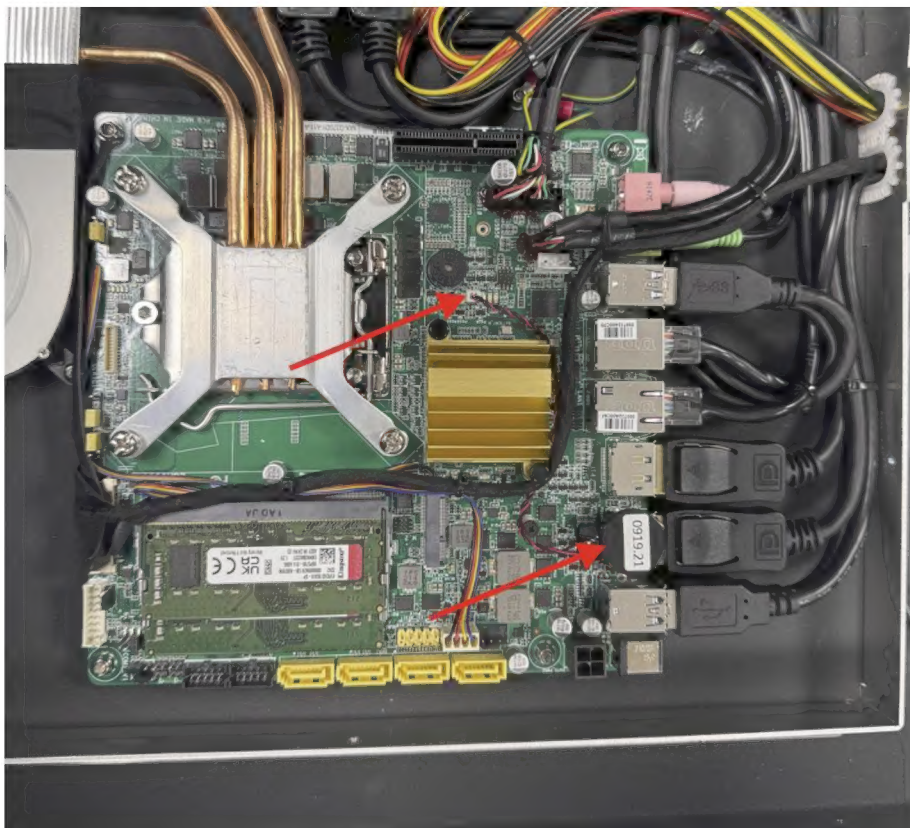
4. Open the desk. Use the screen to keep it in open position.



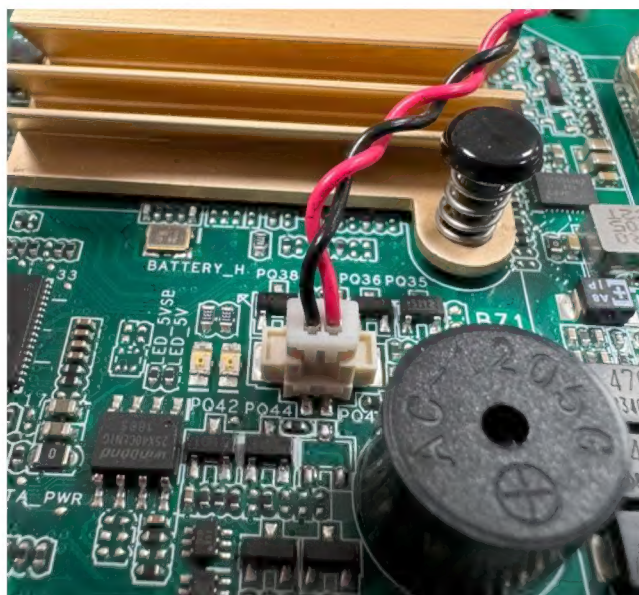
5. Remove 4 nuts and 3 screws from the mainboard cover (Socket bit 5.5mm + Torx T10)



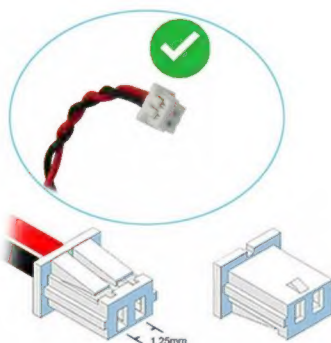
6. Remove the mainboard cover and locate the CMOS battery



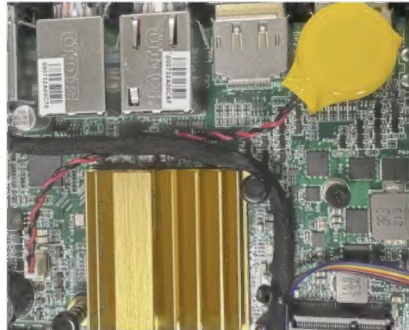
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9. Glue the new battery with double sided tape on one of the output connectors



10. Close the controller in reverse order of opening. **Read first the following remarks.**

- **Do not forget to connect the cover fan when placing the motherboard cover.**



Connector for cover fan

- **Do not forget to reconnect the motherboard power cable**



- **Before the controller is fully screwed in, it is best to test it first. The CMOS will automatically restore the default settings. It may take longer to boot the first time.**